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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/893,964	06/29/2001	Yun Bok Lee	8733.452.00	6107
30827 7590 02/02/2007 MCKENNA LONG & ALDRIDGE LLP 1900 K STREET, NW WASHINGTON, DC 20006			EXAMINER RAO, SHRINIVAS H	
			ART UNIT	PAPER NUMBER
			2814	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		02/02/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 09/893,964	<b>Applicant(s)</b> LEE ET AL.	
	<b>Examiner</b> Steven H. Rao	<b>Art Unit</b> 2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 28 November 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

Art Unit: 2814

### **DETAILED ACTION**

A request for continued examination under 37 CFR 1.114 was filed in this application after appeal to the Board of Patent Appeals and Interferences, but prior to a decision on the appeal. Since this application is eligible for continued examination under 37 CFR 1.114 and the fee set forth in 37 CFR 1.17(e) has been timely paid, the appeal has been withdrawn pursuant to 37 CFR 1.114 and prosecution in this application has been reopened pursuant to 37 CFR 1.114.

Applicant's submission filed on November 28, 2007 has been entered.

#### ***Preliminary Amendment***

Applicants' amendment filed along with the RCE request has been entered , therefore claims 1,10-13,19 and 24-26 have been amended by the preliminary amendment and claims 2-9,14-18, 20-23 and 27-30 as previously recited are currently pending in the Application.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1,3 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (U.S. Patent No. 5,946,066, hereinafter Lee)( previously applied) and

Art Unit: 2814

further in view of AAPR ( Applicants' Admitted Priori Art, as shown at least in Applicants' figs. 1-2 and specification pages 2-5, etc. ) .

With respect to claim I Lee describes a liquid crystal display device comprising: a plurality of gate lines on a layer on a surface of a substrate ( Lee fig. 3 A # 11, co1.2 line 41-42) a plurality of data lines, crossing said gate lines, such that at least one pixel region is defined by the data and gate lines, ( fig. 3 A # 12, col. 2 lines 42-45) at least one of said data lines defining the pixel region having a first data line section and a second data line section, the first data line section and the second data line section intersecting at a data line bent portion ( fig. 3A # 12 is bent) at least one data electrode in the pixel region, the data electrode having a first data electrode section and a second data electrode section, the first data electrode section and the second data electrode section intersecting at a data electrode bent portion; ( Lee figure 3a # 13, col. 2 lines 60-65) at least one common electrode in the pixel region, the common electrode having a first common electrode section and a second common electrode section, the first common electrode section and the second common electrode section intersecting at a common electrode bent portion; ( Lee fig. 3 A #14, col. 2 lines 58-61 ) and at least one common line in the pixel region ( Lee co1.2 lines 63-64), the common line crossing the data lines, the data electrode, and the common electrode. ( Lee figs. 3a, b etc., AAPR figs. 1-2 )

Lee does not specifically describe the presently newly added limitation of wherein the common electrode is formed on a different layer in a cross sectional view when perpendicular to the surface of the substrate from the gate electrode .

However, AAPR in figs. 1,2, etc. describes the common electrode ( Figs. 1,2 – 11, 11a ) is formed on a different layer in a cross sectional view when perpendicular to the surface of the substrate from the gate electrode to improve improves an aperture ratio and a process margin and minimizes disclination.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include AAPR's the common electrode ( Figs. 1,2 –11, 11a ) is formed on a different layer in a cross sectional view when perpendicular to the surface of the substrate from the gate electrode In Lee's device the motivation for the above combination is to improve improves an aperture ratio and a process margin and minimizes disclination.

With respect to claim 3 Lee describes the liquid crystal display device of claim 1, wherein the common line is substantially parallel to the gate line. ( Lee figs. 3 a, b < AAPR figs. 1,2 etc. ).

With respect to claim 8 Lee describes the liquid crystal display device of claim 1, wherein the data electrodes partially overlap at least one of the gate lines. (Lee figs. 3 a, b, AAPR figs. 1,2 etc. ).

**B.** Claims 2, 4-7 and 9 to 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (U.S. Patent No. 5,946,066, hereinafter Lee) in view of AAPR ( Applicants' Admitted Priori Art, as shown at least in Applicants' figs. 1-2 and specification pages 2-5, etc. ) as applied to claim 1 above and further in view of Asada et al. (U.S. Patent No. 5,745,207, herein after Asada).

Art Unit: 2814

With respect to claim 2, Lee describes the liquid crystal display device of claim 1 wherein the common line crosses the data line at the data line bent portion. ( Lee 3b # 11 intersecting 12, col. 2 lines 42-44).

Lee and AAPR do not specifically state the common line crosses data electrode at the data electrode bent portion, and the common electrode at the common electrode bent portion.

However, Asada in Figure 3 and col. 6 lines 56-65 describes the common line crosses data electrode at the data electrode bent portion, and the common electrode at the common electrode bent portion to compensate the coloring corresponding to the angle of view and the total non-display area can be reduced.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to include Asada's arrangement of the common line crosses data electrode at the data electrode bent portion, and the common electrode at the common electrode bent portion In Lee and AAPR's device to compensate the coloring corresponding to the angle of view and the total non-display area can be reduced. ( Asada col. 3 lines 60- to col. 4 lines 5).

With respect to claim 4 Lee describes the liquid crystal display device of claim 1, wherein the first data line section, the first data electrode section, and the first common electrode section are substantially parallel. ( Lee figures 3 a,b).

With respect to claims 5 to 7 Lee describes the liquid crystal display device of claim 1, wherein the common lines, data electrodes and common electrodes comprise a transparent conductive material ( Asada col. 1 line 34-35).

Art Unit: 2814

With respect to claim 9 Lee describes the liquid crystal display device of claim 1, wherein a storage capacitor is formed where the common line crosses the data electrode. ( Asada col. 1 line 40).

With respect to claim 10 Lee describes a liquid crystal display device comprising: a plurality of gate lines on a first surface of a substrate ; a plurality of data lines, crossing said gate lines, such that at least one pixel region is defined by the data and gate lines, at least one of said data lines defining the pixel region, the data lines having a plurality of data line segments, the data line segments intersecting at data line bent portions, wherein each pixel region includes ; at least one data electrode in the pixel region, each data electrode having a plurality of data electrode segments, the data electrode segments intersecting at common electrode bent portions; and at least one common electrode in the pixel region, each common electrode having a plurality of common electrode segments, the segments intersecting at common electrode bent portions; and at least one light shielding layer on the pixel region, the light shielding layer crossing the data lines the data electrode, and the common electrode at respective ones of the data line bent portions, the data electrode bent portions and the common electrode bent portions wherein the at least one light shielding layer is formed on a different layer in the cross sectional view taken perpendicular to the surface of the substrate from gate lines. (Lee figure 3 B, col.3 lines 8-15, AAPR figs. 1-2, etc. ) and are rejected for the same reasons as claims 1-9 above).

With respect to claim 11, Lee The device of claim 10, wherein one of the light shielding layers is a common line. (Lee col. 2 lines 63-65 and Asada col. 5 line 30)

With respect to claim 12 Lee describes An in-plane switching mode liquid crystal display device comprising: gate lines formed on a substrate; data lines having a plurality of data line segments intersecting at a plurality of bent portions to cross the gate lines, crossing of the the data and gate lines defining a pixel region; wherein each pixel region includes a plurality of data electrodes and common electrodes each having a plurality of segments intersecting at bent portions; a common line on bent portions of the data lines, the data electrodes and the common electrodes; and a plurality of auxiliary common lines on bent portions of the data electrodes and the common electrodes. Rejected for same reasons as claims 1 and 10 above).

With respect to claim 13 Lee describes the device of claim 12, wherein the common lines are substantially parallel with the gate lines. ( Asada fig. 2,etc.).

With respect to claims 14 to 16 Lee describes the device of claim 12, wherein the common lines, data electrodes and common electrodes include transparent conductive film. (rejected for the same reasons as set out under claims 5-7 above).

With respect to claim 17 Lee describes the device of claim 12, wherein at least one of the common lines is formed within the pixel region. ( rejected for the same reasons as stated under claim 1 above).

With respect to claim 18 Lee describes the device of claim 12, wherein the data lines, the data electrodes, and the common electrodes have at least one bent portion. ( Lee figs. 3a,b)



With respect to claim 19 Lee describes the device of claim 12, wherein the common lines are formed integrally with the common electrodes and the common lines and common electrode are formed on the data electrode . (Asada fig. 2 etc.)

With respect to claim 20 Lee describes the device of claim 12, wherein the data electrodes are connected with the gate lines. ( Lee col.2 lines 62-65, Asada fig. 2).

With respect to claim 21 Lee describes the device of claim 12, wherein the data electrodes overlap the gate lines.( Lee figs. 3a,b and Asada fig.2).

With respect to claim 22 Lee describes the device of claim 12, wherein the data and common electrodes are on different layers..( Lee figs. 3a,b and Asada col.1 lines 41-65).

With respect to claim 23, Lee describes the device of claim 12, further comprising a light shielding layer on the bent portion between the data electrodes and the common electrodes. (Lee col. 2 lines 63-65 and Asada col.5 line30 ).

With respect to claim 24 Lee describes an in-plane switching mode liquid crystal display device, comprising: gate lines on a substrate; data lines having a plurality of data line segments intersecting at data line bent portions to cross the gate lines, the data and gate lines defining a pixel region; a plurality of data electrodes having a plurality of data electrode segments intersecting at data electrode bent portions; common electrodes having a plurality of common electrode segments intersecting at a plurality of common line bent portions, the common electrodes being connected with each other at the bent portions; and common lines on the bent portions of the data

Art Unit: 2814

lines, the data electrodes and the common electrodes. ( rejected for the same reasons as claims 1,10 and 12 above).

With respect to claim 25 Lee describes the device of claim 24, wherein the data electrodes are overlapped with the gate lines. ( Asada figure 2)

With respect to claim 26 Lee describes the device of claim 24, wherein the common electrodes are connected together by the common lines. ( Asada figs. 2, 3)

With respect to claim 27 Lee describes the device of claim 24, wherein the data electrodes include a first electrode and a second electrode. ( Lee fig.3 a, b etc. and Asada figs. 2)

With respect to claim 28 Lee describes the device of claim 27 wherein the first electrode has a plurality of bent portions. ( Lee fig. 3 a, b etc. and Asada figs. 2).

With respect to claim 29 Lee describes the device of claim 27, wherein the first electrode is connected with the second electrode. ( Lee fig. 3a,b etc. and Asada figs. 2)

With respect to claim 30 Lee describes the device of claim 24, further comprising a light shielding layer on the bent portion between the data electrodes and the common electrodes. (Lee col. 2 lines 63-65 and Asada col.5 line 30).

#### Response to Arguments.

Applicant's arguments filed on November 16, 2006 have been fully considered but they are not persuasive because Lee describes at least one common line in the pixel region, the common line crossing the data lines, the data electrode and the common electrode wherein the common line is formed on a different layer from the gate line as shown above in the rejection.

Art Unit: 2814

Applicants' contentions are moot in view of new rejection .

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven H. Rao whose telephone number is (571) 272-1718. The examiner can normally be reached on 8.30-5.30.

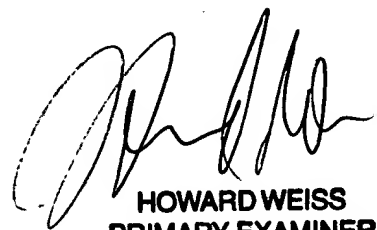
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on 571-272-1714. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Steven H. Rao

Patent Examiner

January 29, 2007.



**HOWARD WEISS**  
**PRIMARY EXAMINER**